

**REMARKS/ARGUMENTS**

Reconsideration of this application, in view of the foregoing amendment and the following remarks and arguments, is respectfully requested.

Claims 1-7, 9-11, 14, 15, 18-49, 57-61, 63-73, 75-80, 82-87, 89-93, 95-113 and 115-123 are currently pending in this application, and the Examiner's allowance of Claims 14, 15, 18-49, 57-61, 63-73, 76-79, 82-87, 95-97, 104-108 and 116-123, and his indication that Claims 4, 100, 102, 103, 111 and 115 contain patentable subject matter, are noted with appreciation.

By the foregoing amendment, Claims 3, 4, 9 and 99 have been canceled without prejudice or disclaimer; Claims 6, 10, 11, 75, 80, 98, 101 and 109 have been amended; and Claims 100, 102 and 103 have been rewritten in independent form. Accordingly, Claims 1, 2, 5-7, 10, 11, 14, 15, 18-49, 57-61, 63-73, 75-80, 82-87, 89-93, 95-98, 100-113, and 115-123 remain in this application for consideration and allowance.

Turning first to matters of form, in the foregoing amendment rejected independent Claims 1 and 75 have been revised to incorporate therein the patentable subject matter of (now canceled) objected-to Claim 4, as well as the limitations of now canceled Claim 3, thereby clearly placing rejected Claims 1, 2, 5, 7 and 75 in a condition for allowance. Additionally, the rewriting of objected-to dependent Claims 100, 102 and 103 in independent form is seen to place these claims in a condition for allowance as well.

Turning now to the merits of applicants' claims, the following substantive claim rejections, which are respectfully traversed for reasons subsequently set forth herein, were made in the June 27, 2003 Office Action:

1. Claims 6, 10, 80, 89-93, 98 and 101 stand rejected under 35 USC §102(b) as being anticipated by U.S. Patent 3,970,877 to Russel et al;
2. Claims 109, 110, 112 and 113 stand rejected under 35 USC §102(b) as being anticipated by U.S. Patent 5,554,922 to Kunkel; and
3. Claim 11 stands rejected under 35 USC §103(a) as being unpatentable over Russel et al in view of U.S. Patent 4,669,068 to Klatt.

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**THE 35 USC §102(b) ANTICIPATION REJECTION OF  
CLAIMS 6, 10, 80, 89-93, 98 AND 101  
OVER U.S. PATENT 3,970,877 TO RUSSEL ET AL**

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Claims 6 and 10 each specify that pressure fluctuations in a fluid conduit **member** to which the recited piezoelectric material is **attached** are "caused by turbulence in fluid flow through its interior". In Russel et al vibration of the piezoelectric material 10 is not caused by turbulence in fluid flow through the interior of the drill string portion to which the piezoelectric material 10 is attached. Instead, vibration of the Russel et al piezoelectric material 10 is caused by turbulence in the mud flow **external to** the drill string portion to which the piezoelectric material 10 is attached. It is thus respectfully submitted that neither of applicants' Claims 6 and 10 is anticipated by the Russel et al reference.

It is noted that Claims 6 and 10 have been clarified in the foregoing amendment to recite a fluid conduit **member** to distinguish over the Examiner's characterization of the Russel drill string and surrounding mud flow passage as combinatively defining a "fluid conduit". A similar clarifying amendment has also been made to Claims 80 and 98 as subsequently discussed herein.

Claim 80 specifies that the recited piezoelectric material is **carried by** a fluid conduit **member** having a flow passage into which a vibratable member extends. In Russel et al, no vibratable member extends **into** a flow passage of a fluid conduit **member** which **carries** the piezoelectric material 10. Nothing extends into the flow passage of the central drill string which carries the piezoelectric material 10, and any conduit structure which might define the mud flow passage outwardly circumscribing the drill string would not be a member that **carries** the piezoelectric material 10. It is thus respectfully submitted that Claim 80 is clearly not anticipated by the Russel et al reference.

Via independent Claims 89 and 92, each of applicants' Claims 89-93 specifies a member having an orifice extending therethrough, fluid flow through the fluid conduit also flowing through the orifice, and the member vibrating in response to fluid flow through the orifice. The Russel et al structure is clearly devoid of this claims orificed vibratable member. It is thus respectfully submitted that none of applicants' Claims 89-93 is anticipated by the Russel et al reference.

Via independent Claim 98, each of applicants' Claims 98 and 101 specifies a displaceable member disposed **within and supported by** the recited fluid conduit **member**, the displaceable member displacing **within** the fluid conduit **member**, a retainer preventing displacement of the displaceable member out of the fluid conduit member, and a piezoelectric

material producing electricity in response to displacement of the displaceable member. In the Russel et al structure these limitations are simply not met. Specifically, there is no displaceable member disposed **within** the inner drill string, and there is no displaceable member which is **supported by** any conduit structure that might define the mud flow passage outwardly circumscribing the drill string. It is thus respectfully submitted that neither of applicants' Claims 98 and 101 is anticipated by the Russel et al reference.

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**THE 35 USC §102(b) REJECTION OF  
CLAIMS 109, 110, 112 AND 113  
U.S. PATENT 5,554,922 TO KUNKEL**

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Via independent Claim 109, each of applicants' Claims 109, 110, 112 and 113 specifies an electrical power generator comprising a fluid conduit having a flow passage formed therethrough and a cavity; a membrane separating the flow passage from the cavity, the membrane flexing in response to pressure fluctuations in the flow passage, the cavity being generally annularly shaped and outwardly surrounding the membrane **in a telescoped relationship therewith**; and piezoelectric material disposed within the cavity, the piezoelectric material producing electricity in response to the membrane flexing.

In the Kunkel structure, there is no cavity which surrounds any of the illustrated membranes in a **telescoped** relationship therewith. It is thus respectfully submitted that none of applicants' Claims 109, 110, 112 and 113 is anticipated by the Kunkel reference.

**THE 35 USC §103(a) OBVIOUSNESS REJECTION  
OF CLAIM 11 VER U.S. PATENT 3,970,877 TO RUSSEL et al  
IN VIEW OF U.S. PATENT 4,669,068 TO KLATT**

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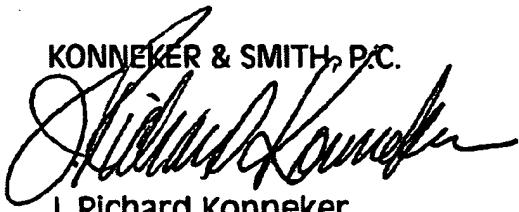
Via its dependency from Claim 10 previously discussed herein, Claim 11 specifies that pressure fluctuations in the fluid conduit to which the recited piezoelectric material is **attached** are "caused by turbulence in fluid flow through its interior". As discussed above with respect to parent Claim 10, the Russel et al reference fails to disclose this claimed feature. This deficiency in Russel et al is in no manner cured by the Klatt reference which has been cited by the Examiner solely for its alleged teachings with respect to a helically shaped fluid conduit. It is thus respectfully submitted that Claim 11 is patentably distinguishable over the Russel et al and Klatt references whether these two references are considered singly or in any combination thereof.

In view of the foregoing amendment, remarks and arguments, all of the claims currently pending in this application are now seen to be in a condition for allowance. A Notice of Allowance of Claims 1, 2, 5-7, 10, 11, 14, 15, 18-49, 57-61, 63-73, 75-80, 82-87, 89-93, 95-98, 100-113, and 115-123 is therefore earnestly solicited.

The Examiner is hereby requested to telephone the undersigned attorney of record at 972/516-0030 if such would further or expedite the prosecution of the instant application.

Respectfully submitted,

KONNEKER & SMITH, P.C.



J. Richard Konneker  
Attorney for Applicants  
Registration No. 28,867

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660 N. Central Expwy., #230  
Plano, Texas 75074  
972/516-0030

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450,

on August 22, 2003  
Charity Sait